

## **LANDFIRE Information Bulletin # 2**

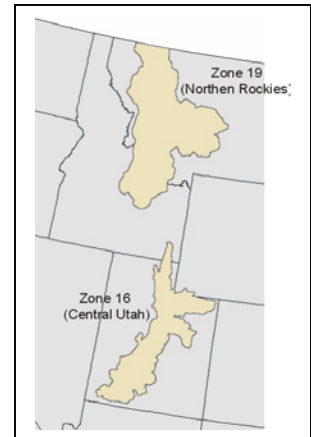
February 10, 2003



The LANDFIRE project is designed to provide the spatial data and predictive models required for characterizing fuel conditions and fire regimes and for helping to evaluate fire hazard status at high resolution for the United States. The project is funded through an interagency partnership by the U.S. Forest Service (USFS) and Department of the Interior, and is conducted jointly by the USFS and the U.S. Geological Survey (USGS). Research and development to prototype the LANDFIRE project began in March 2002. Visit <http://www.landfire.gov> for LANDFIRE Information Bulletin #1 (March 2002) and LANDFIRE Study Plan for general information about the project and technical design.

### **Progress**

Fire scientists at the USFS Fire Science Laboratory (FSL) in Missoula, MT, and remote sensing scientists at the USGS EROS Data Center (EDC) in Sioux Falls, SD are working on the development of a series of spatial data layers and models that are integral to developing a National fire and fuel assessment. Work is currently focusing on a large test area that includes the Wasatch and Uinta Mountains of central Utah and the Rocky Mountains in western Montana and Idaho. Progress to date includes the following:



#### **Developments from USFS FSL**

- A comprehensive field reference database
- LF-BGC (an ecosystem biogeochemical model)
- WXFIRE (a fire model assimilating weather data)
- Biophysical Settings (classification of environmental gradient layers)
- Potential Vegetation Types (PVT)

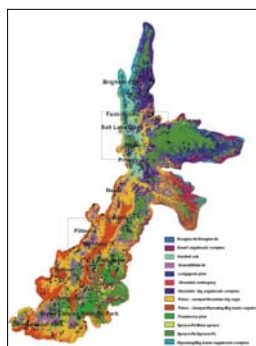
#### **Developments from USGS EDC**

- Multi-dates of Landsat 7 mosaic imagery
- Mapping of vegetation types by life forms
- Mapping of percent vegetation canopy cover by life forms
- Mapping of average canopy height by life forms
- Initial accuracy assessment of the existing vegetation layers

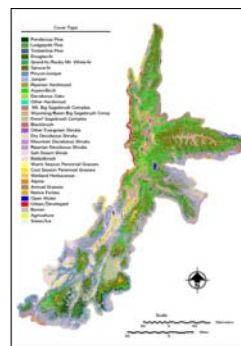
### **Examples of preliminary results**



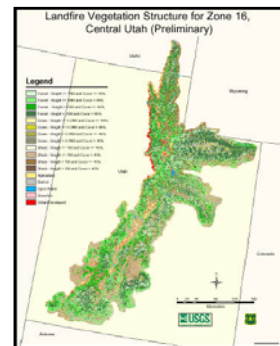
Classified  
biophysical settings



Potential  
vegetation types



Existing  
vegetation types



Vegetation structure  
by life form

## **Outlook**

We are on target for delivering the vegetation database and much of fuels maps for the entire Central Utah prototype area by the end of 2003. Biophysical settings and Potential vegetation type maps for the Northern Rockies area will be ready in Fall 2003. Initial fire behavior and effects and fire danger products will be available for Central Utah by Summer 2004.

Refinements of the ecosystem modeling, vegetation mapping, and vegetation characterization methodology are currently being made, with the goal of improving upon accuracy levels and developing a standardized, portable methodology to for other regions. Initiation of the vegetation database development for the Northern Rockies prototype area is scheduled to start later in 2003.

## **Upcoming publications from LANDFIRE project**

- Huang, C., B. Tolk, J. Vogelmann, M. Knuppe, and Z. Zhu, 2003, Deriving annual integrated NDVI greenness at 30 m spatial resolution, to be published in 2003 ASPRS Annual Conference, Technology: Converging at the Top of the World, Anchorage, Alaska, May 5-9, 2003, Proceedings: Bethesda, Maryland, American Society for Photogrammetry and Remote Sensing (CD-ROM).
- Moisen, G.G., T.S. Frescino, C. Huang, J. Vogelmann and Z. Zhu, 2003, Predictive modeling of forest cover type and tree canopy height in the central Rocky Mountains of Utah, to be published in 2003 ASPRS Annual Conference, Technology: Converging at the Top of the World, Anchorage, Alaska, May 5-9, 2003, Proceedings: Bethesda, Maryland, American Society for Photogrammetry and Remote Sensing (CD-ROM).
- Rollins, M.G., R. E. Keane, and R. A. Parsons. 2003. Mapping Fuels and Fire Regimes Using Remote Sensing, Ecosystem Simulation, and Gradient Modeling. In revision. Ecological Applications.
- Tolk, B., C. Huang, Z. Lu, R. Rykhus, and J. Vogelmann, 2003, Deriving rangeland structural attributes using Landsat ETM+, ERS-1/ERS-2, to be published in 2003 ASPRS Annual Conference, Technology: Converging at the Top of the World, Anchorage, Alaska, May 5-9, 2003, Proceedings: Bethesda, Maryland, American Society for Photogrammetry and Remote Sensing (CD-ROM).
- Vogelmann, J.E., C. Huang, B. Tolk, G.G. Moisen, and Z. Zhu, 2003, Exploration of satellite-measured vegetation seasonality for Landfire land cover, to be published in 2003 ASPRS Annual Conference, Technology: Converging at the Top of the World, Anchorage, Alaska, May 5-9, 2003, Proceedings: Bethesda, Maryland, American Society for Photogrammetry and Remote Sensing (CD-ROM).
- Zhu, Z., C. Huang, J. Vogelmann, B. Tolk, J. Menakis, and Moisen, 2003, A strategy for mapping mid-scale existing vegetation in support of National fire fuel assessment, to be published in 2003 ASPRS Annual Conference, Technology: Converging at the Top of the World, Anchorage, Alaska, May 5-9, 2003, Proceedings: Bethesda, Maryland, American Society for Photogrammetry and Remote Sensing (CD-ROM).

## **Further Information**

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